SURREBUTTAL TESTIMONY OF DAVID G. HILL, Ph.D.

ON BEHALF OF

SOUTHERN ALLIANCE FOR CLEAN ENERGY AND SOUTH CAROLINA COASTAL CONSERVATION LEAGUE

DOCKET NO. 2019-226-E

Q: Please state your name, business affiliation and position.

A: My name is David Hill and I am a Managing Consultant with Energy Futures Group, Inc. in Hinesburg, Vermont.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of the Southern Alliance for Clean Energy ("SACE") and the South Carolina Coastal Conservation League ("CCL").

Q: Are you the same David Hill who previously submitted direct testimony in this proceeding?

A: I am.

Q: What is the purpose of your surrebuttal testimony?

A: The purpose of my surrebuttal testimony is to address the assertions in the rebuttal testimony of Therese Griffin related to the analysis of demand-side management ("DSM") resources in developing the Dominion Energy South Carolina ("DESC" or "the Company") 2020 Integrated Resource Plan ("IRP").

Q: Can you please summarize the points in your surrebuttal testimony?

A: Yes. The Energy Freedom Act ("EFA") requires inclusion and fair evaluation of a high DSM case—that is, a scenario that analyzes higher levels of demand response and energy efficiency resources. DESC did analyze a case labeled "high" in developing its resource plan, and in fact, DESC's 2020 IRP shows that this 1% DSM case is least-cost for most of the portfolios investigated. This result is both important and unsurprising. It is important because DSM resources are zero-emitting, dependable and low-risk; it is unsurprising because DSM resources are typically lower-cost than supply-side resources. As explained in my direct testimony, however, DESC improperly dismisses this important result by stating that the cost-effectiveness of the 1% DSM case is unknown, and that it is likely not achievable.

Ms. Griffin attempts to justify this dismissal by stating the high DSM case is not supported by the 2019 Market Potential Study ("2019 MPS") conducted by ICF for DESC's service territory. However, this argument is circular, because the 2019 MPS itself did not analyze a 1% DSM case. The 2019 MPS did not evaluate maximum achievable DSM potential or analyze any level of DSM savings beyond the medium case; the EFA, however, requires that DESC fairly evaluate a high DSM case in its IRP. The 2019 MPS does not support DESC's out-of-hand dismissal of the 1% case savings in the current IRP, and DESC's conclusory assertions about the cost-effectiveness and achievability of DSM resources beyond the more limited potential identified in the MPS do not constitute a "fair evaluation" of a high DSM case as required by the EFA.

Q: Based on your direct and surrebuttal testimony, what do you recommend?

A: I recommend the Commission reject the IRP as filed and direct DESC to conduct a fair evaluation of a high DSM case.

Q: What does the Energy Freedom Act say regarding evaluation of a high DSM savings case in the IRP?

A: The EFA states that IRPs "shall include several resource portfolios developed with the purpose of fairly evaluating the range of demand-side…technologies and services available to meet the utility's service obligations," including the "evaluation of low, medium, and high cases for the adoption of…energy efficiency, and demand response measures." S.C. Code Ann. § 58-37-40(B)(1)(E) (emphasis added).

Q: Did DESC analyze a high DSM case in developing the 2020 IRP?

A: DESC analyzed a case that reaches 1% annual incremental savings, labeling it a "high" DSM case. While I comment further below on why 1% savings are not necessarily a "high" case, I first address the results as presented in the IRP and will use the "high" DSM case: as presented in the plan.

Q: What were the results of DESC's high DSM analysis?

A: The high DSM case is the least cost option for five of the eight resource portfolios analyzed in the IRP (RP1, 2, 5, 6, and 8), including RP2, the one DESC identified as preferred. For six of the eight portfolios (RP1, 2, 3, 5, 6, and 8), the high DSM case has lower estimated net present value ("NPV") costs than the medium DSM case.

Resource Plan Levelized NPV for Low, Medium and High DSM ($000)

Resource Plan ID	Resource Plan Name	Low DSM	Medium DSM	High DSM
RP1	CC	1,254,935	1,249,160	1,244,419
RP2	ICT	1,231,227	1,231,667	1,228,438
RP3	Retire Wateree	1,242,386	1,251,077	1,249,280
RP4	Retire McMeekin	1,248,340	1,239,802	1,248,403
RP5	Solar + Storage	1,272,513	1,266,727	1,264,403
RP6	Solar	1,244,428	1,246,165	1,243,761
RP7	Solar PPA + Storage	1,242,682	1,236,518	1,243,916
RP8	Retire Coal	1,271,348	1,267,624	1,260,246

Q: What was the basis for the high, medium and low DSM cases?

A: As explained on page 42 of the IRP,

> Three DSM cases were created. The low DSM is equivalent to DSM programs and levels on the DESC electric system prior to the 2019 Potential Study. The medium DSM used the results of the 2019 Potential Study described in Part II.A. High DSM assumed DSM Growth to 1% of retail sales by 2024.

The increase by 2024 to 1% annual incremental savings that DESC selected to represent the high DSM case in its IRP is higher than the medium and low cases. The achievability and cost-effectiveness of 1% annual incremental savings is bolstered by both research and real-world experience across the nation. As explained in my direct testimony, numerous utilities across differing geographies and climates have achieved savings well above 1%. I continue to recommend and support the investigation of a high DSM case with savings above 1% as appropriate in this IRP. Particularly given the ordered adjustments to DESC's avoided costs for DSM measures, [1] higher levels of cost-effective savings than those represented by the medium case can be expected. As indicated in the DSM Potential Study Avoided Cost Update [2], the updated avoided costs increased the savings and cost-effectiveness ratios for the medium portfolio. The avoided cost adjustments will also improve the cost-effectiveness for both a 1% case and a true high case. DESC has yet to evaluate the cost effectiveness of either of these options. The Company didn't do it in the MPS, and it has not done it in the IRP. For these reasons, I continue to recommend and support the fair investigation, which means assessing the achievability and cost effectiveness - rather than dismissing them out of hand, for a high DSM case with savings above 1%.

[1] PSC Order No. 2019-880 at 26.
[2] SC PSC Docket No. 2019-239-E, DESC Avoided Cost Report for DSM Programs Filed Pursuant to Commission Order No. 2019-880, Table 1 (filed July 22, 2020).

Q: On what basis did DESC dismiss the high DSM case?

A: DESC explains on page 37 of the IRP that "the DSM Low and Medium cases were studied for cost-effectiveness and provide a reliable cost estimate that is unique to the portfolio of programs and customers in DESC's electric system." In contrast, as witness Griffin repeats in her testimony, "[t]he High DSM case was not supported in the 2019 Potential Study and is based on estimates." The IRP then dismisses the high DSM case in the following fashion: "It should be noted that the High DSM case was not supported in the 2019 Potential Study and is based only on estimates, likely not achievable and cost effectiveness is unknown." [3]

Q: How do you respond to the Company's assertion, repeated by Ms. Griffin in her rebuttal, that the high case DSM is not supported by the 2019 MPS?

A: It is a meaningless truism. As explained above, the 2019 MPS did not evaluate a high DSM case; therefore, it could not support a high DSM case. As DESC witness David Pickles admitted during the evidentiary hearing in Docket No. 2019-239-E, the MPS did not evaluate the cost effectiveness and achievability of levels of savings beyond the medium case. [4] The 2019 MPS did not identify all cost effective potential in the service territory, nor did it evaluate the high DSM case that is modeled in the 2020 IRP.

The Commission, in its final order in Docket No. 2019-239-E, implicitly recognized that the 2019 MPS did not evaluate cost-effective savings at or above the 1%

[3] Dominion Energy South Carolina 2020 Integrated Resource Plan at 42.
[4] SC PSC, Docket No. 2019-239-E Hearing Tr. at page 83 line 24 to page 84 line 1 and page 86 line 23 to page 87 line 1.

level, or the technical, economic, or even maximum achievable potential for energy efficiency, stating that DESC must do so in its next potential study. [5]

So, there is no disagreement: the Company's 2019 MPS does not identify a maximum achievable level or a maximum cost-effective level of energy efficiency. Furthermore, it did not evaluate levels of savings beyond the medium case as represented in the IRP. Even if it did, it's important to understand that market potential studies are often inherently conservative on the level of savings that can be achieved, particularly over the length of time modeled in an IRP. [6]

As such, I agree with Ms. Griffin's assertions that such analyses were not in the scope of the 2019 MPS. However, that does not excuse DESC from fairly evaluating the high DSM case in the IRP, which it was required to do under the EFA.

Q: Are you attempting to re-litigate the MPS, as Ms. Griffin implies?

A: No. Ms. Griffin does not seem to have understood the point I was making in my direct testimony, so let me make it very clear: the fact that the 2019 MPS, which DESC commissioned for a different proceeding, did not evaluate higher levels of DSM savings does not excuse DESC from fairly evaluating a high DSM case in the current IRP proceeding. Ms. Griffin's argument that the 1% DSM case is not supported by, and was not in the scope of, the 2019 MPS does not address the fact that the EFA states the IRP shall include a fair evaluation of a high DSM case. Moreover, DESC acknowledges that it did not even attempt to study the cost-effectiveness of the 1% DSM case—making the

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[5] SC PSC, Docket No. 2019-239-E, Order No. 2019-88 at 18 (Dec. 20, 2019) ("However, the Commission would like to see more aggressive efforts in attaining increased efficiency in the future and encourages the Company to maximize cost effective gains in energy efficiency with a 1% goal or more of energy savings. To that end, the next Potential Study shall evaluate the technical potential, economic potential, and maximum achievable potential for energy efficiency.")

[6] Kramer, C, and G. Reed, 2012. *Ten Pitfalls of Potential Studies*, Regulatory Assistance Project, https://www.raponline.org/knowledge-center/ten-pitfalls-of-potential-studies/

Company's statement that its cost-effectiveness was "unknown" a foregone conclusion. For the Company to dismiss the 1% DSM case in the IRP as "likely not achievable and of unknown cost effectiveness" without actual analysis is not the fair evaluation required by the EFA.

Regardless of whether higher DSM savings were evaluated in the MPS, they must be fairly investigated in the IRP in order to satisfy the statute. This is particularly true given DESC's own estimates in the IRP indicating that the 1% DSM case is least cost for most portfolios and thus least cost for customers. This is a reason for further inquiry into the cost effectiveness and achievability of a level of DSM resources that would reduce system costs for all ratepayers, not the opposite. Ms. Griffin, like the IRP itself, dismisses the least cost results for the 1% DSM case by citing the past exclusion of higher savings analyses from the MPS, but this argument merely sidesteps the issue rather than addressing it.

Q: Do you have recommendations on how DESC should revise the IRP so it is a fair evaluation of higher levels of DSM?

A: Yes. Simply put, to be fair, the IRP needs to assess the cost effectiveness and achievability of a high DSM case. For example, the IRP can model costless reductions (decrements) in load in the same shape as load to identify the avoided value of energy and capacity and then use those values, as inputs for calculating the benefit cost ratios for a DSM portfolio reaching or exceed the 1% annual savings level. [7] I recommend that 1% and higher savings decrements be used in this approach.

[7] Several additional costs and benefits, such as avoided transmission and distribution, avoided costs for non-electric fuels, health and safety benefits, customer costs should also be included in calculating the cost effectiveness of a high DSM portfolio.

In regards to achievability, I provided citations in my direct testimony of regional comparisons and experience in other jurisdictions and these affirm my conviction that if DESC wants to design and implement an achievable and cost-effective portfolio that reaches or exceeds 1% annual savings that they can do so. If necessary, stakeholders can provide significant input on how DESC can achieve this goal without going to the work of redoing the MPS.

Q: How do you respond to Ms. Griffin's critique of your citation of comparative levels of cost-effective DSM savings from other jurisdictions?

A: Ms. Griffin presents a list of reasons why industry benchmarks are not useful indicators of DESC's savings potential. Again, she misses the point. The comparisons I provided do not replace the need for a thorough analysis of the cost-effectiveness and achievability of higher DSM savings in DESC's territory—in fact, they underscore the need for such an analysis. DESC should find it quite relevant that sister utilities, including some with customers in South Carolina, achieve higher DSM savings than does DESC. The evidence of savings by utilities across a broad set of geographies and climates strongly indicates that much higher levels of savings could be achieved in DESC's service territory and provides support for the need to examine this potential in developing a robust, defensible high DSM case for purposes of resource planning.

The comparisons I cited provide helpful context and guidance for the scale of savings that should be within the scope of those evaluated in detail by DESC or its contractors. These comparisons also support my recommendation that the Commission should not accept DESCs out-of-hand dismissal of the 1% level of savings, or even accept the 1% DSM as a high case, particularly when such dismissal was based merely on DESC's omission of this analysis in its overly conservative 2019 MPS.

Q: Are you suggesting that the factors enumerated by Ms. Griffin should be ignored?

A: Not at all. As noted by Ms. Griffin in her rebuttal testimony, there are many jurisdiction- and market-specific factors to consider when properly evaluating the cost effectiveness and achievability of a high DSM case. I agree with Ms. Griffin that the factors listed by the Commission in Order No. 2019-880 are important and must be considered in such an evaluation to account for the specific characteristics of DESC's system and its customers. It is appropriate to consider baseline efficiencies, expected standard or code upgrades for lighting and other measures, incremental costs for measures, and changes in avoided costs used for screening of energy efficiency cost effectiveness. Some of these factors will decrease achievable cost-effective savings and some will increase them, but the need to account for them is common to all jurisdictions and inherently accounted for in my comparison.

But these factors only underscore why DESC should modify its IRP to directly consider and fairly evaluate a high DSM case. The MPS did not assess levels of savings beyond the medium portfolio and it cannot be used to set an upper limit on cost effective or achievable DSM savings. DESC's citation of the 2019 MPS in its IRP and its failure to fairly analyze a high DSM case as required by the EFA is a classic example of how market potential study results are often misused.

Q: Do you have any recommendations for the Commission based on your testimony?

A: Yes. Since DESC's IRP plan finds that the 1% case would save ratepayers money in most of the portfolios, I recommend the Commission reject DESC's IRP as filed and require DESC to file a modified IRP that includes an updated and fair analysis of the achievability and cost effectiveness of 1% and higher levels of DSM. If these cases are found to be cost effective and achievable, they should be included in the IRP preferred plan and in the Company's future decision making. I am not asking that DESC redo the MPS, but simply that the IRP include a fair evaluation of a high case for DSM, as it is required to do.

Q: Does this conclude your testimony?

A: Yes.

STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION
DOCKET NO. 2019-226-E

In the Matter of: South Carolina Energy Freedom Act (House Bill 3659) Proceeding Related to S.C. Code Ann. Section 58-37-40 and Integrated Resource Plans for Dominion Energy South Carolina, Incorporated	CERTIFICATE OF SERVICE

I certify that the following persons have been served with one (1) copy of the Surrebuttal Testimony of David Hill by electronic mail and/or U.S. First Class Mail at the addresses set forth below:

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<u>/s/Emily Selden</u>
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